

XIX.

SUB-DIAPHRAGMATIC ABSCESS SIMULATING  
EMPYEMA.

By F. TILDEN BROWN, M.D.

L. S., female, twenty-nine, Ireland. Married five years.

Admitted to the Presbyterian Hospital June 9, 1893.

Died July 30, 1893.

Family history negative. Personal history: Menstruation began at fifteen; irregular until after marriage. Two years ago she was delivered, after protracted and instrumental labor, of a dead child. One year later she began to have pain in the left inguinal region. This pain continued for seven months, when complete obstruction from faecal impaction made her critically ill. Being relieved, she was subsequently free from abdominal pain by using small daily doses of castor oil. She entered the Hospital for the repair of lacerated cervix and perineum.

*On Admission.*—Temperature, pulse, and respiration normal. Physical examination, negative. Urine: 1014 specific gravity; trace of albumin; no casts.

June 11. Operation for perineorrhaphy and trachelorrhaphy. Anæsthetized with ether.

June 18. Sutures removed from perineum. Good union.

June 19. Complains of pain in the right umbilical region.

June 21. Temperature rose suddenly to-day to 103.6°; pulse, 120; respiration, 20. Free catharsis and quinine effected a temporary fall of temperature.

June 26. Temperature is between 103° and 104° each afternoon. Complains now of pain in the left lumbar region. Vomits frequently and looks sick. Nothing found on examination.

June 30. For last few days temperature not over 100°, but pain in left side continues. Patient vomits at times.

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July 7. Patient complains of pain in the abdomen, is restless, vomits, has diarrhœa, and again high afternoon temperature. Lavage of colon given.

July 20. Continues to have afternoon pyrexia, followed by profuse sweating. Delirious last night. Pain in the left side.

July 21. Aspirating needle introduced in the eighth intercostal space above and behind the angle of the left scapula. Yellowish fluid withdrawn. Examination shows it to be pus, and by culture a pure growth of colon bacillus is obtained.

July 25. Patient has developed a large and painful double parotiditis.

July 29. During the week, until to-day, patient and family have declined operation. She is now in a critical condition. Ether anæsthesia. Aspiration in the eighth intercostal space in mid-axillary line. Pus drawn. An incision is made upon the seventh rib. One and a half inches of the bone is excised. There is no bulging forward of the parietal pleura. On making an incision through the tissue which presented and which looked rather more like muscle than compressed lung, the sub-diaphragmatic abscess was for the first time suspected. Through the completed incision the finger could touch the concavity of the diaphragm above, and on evacuation of a large quantity of offensive pus and broken-down tissue the apex beat could be reached on the inner side, and what appeared to be disintegrated spleen towards the lower side of the wound.

Hot douching brought away much additional debris. Generous drainage with tubes and gauze. The wound was covered by usual dressings.

Patient rallied but little despite stimulation and saline infusion, dying at noon the following day.

*Autopsy* nine hours after death. Left lung at the base hyperæmic and adherent to the diaphragm. Otherwise both lungs and pleura normal. Heart normal.

Stomach at its cardiac end has a hard, finger-sized, white fibrous adhesion connecting it with the upper part of the spleen. On the mucous surface of the stomach opposite the adhesion there is no gross evidence of any former perforation or ulcer.



Spleen was three times its normal size and nearly parted into two equal halves by a large necrotic infarct, the base of which was at the convexity of the organ. The upper half of the spleen was drawn towards the stomach by the fibrous band and occupied a position at right angles to the normal axis. Firm adhesions connected the splenic halves to all surrounding parts except the diaphragm above. The peritoneal cavity was thus protected.

Kidneys: Both have numerous small white infarcts.

Intestines, liver, pancreas: Negative.

Uterus has on posterior lower surface a fibroid the size of a duck's egg.

Tissues of the perineum and cervix uteri appear normal, and the process of repair appeared perfect. There was no gross evidence to intimate that infection had occurred in connection with the operation.

Note: The history of fæcal impaction was explained at the autopsy by the presence of a uterine fibroid indirectly invading the lumen of the rectum.

The suspicion of sub-diaphragmatic abscess should have occurred when the first pus drawn by aspiration yielded only a culture of *bacillus coli communis*, added to the fact that there had been no pre-existing pulmonary history, although the physical signs corresponded to and naturally suggested empyema. The occurrence of double symptomatic parotitis should also have aided in my case to attract attention to the probability of a process involving the peritoneum rather than the pleura.

Meltzer, in his paper on sub-phrenic abscess, refers to the error liable to ensue from placing too great reliance upon physical signs, and cites in evidence Wintrich's mistaking a sub-diaphragmatic abscess containing air for a pyo-pneumothorax, and yet he does not wholly agree with Leyden, who claims that the etiology and history of the existing sickness is the only means of diagnosing a sub-phrenic abscess from an empyema or pyo-pneumothorax, for in two of the cases which he (Meltzer) has had such a dependence for diagnostic purposes would have proven deceptive where sub-phrenic abscess existed, and yet the primary cause was located in the cavity above the diaphragm in both cases. Moreover, he believes he has demonstrated that there are

cases of intra-pleural effusions with an exclusive and pronounced abdominal history.

Penrose and Dickinson have reported ten cases of sub-diaphragmatic abscess, in all of which a gastric perforation was found at autopsy. In another case they had no perforation, but a cicatrized ulcer, where the cicatrization had apparently taken place subsequently to the formation of the abscess.

In my case it is rational to presume that the same conditions pertained, and that the compact fibrous band uniting stomach and spleen was a former walled-in fistula leading from a gastric perforation to the seat of the abscess.

Whether the prostrating attacks of abdominal pain experienced by the patient three months before entering the Hospital were due to obstructive, intestinal colic, or to a gastric ulcer and localized peritonitis can only be relatively inferred.

At all events the operation on cervix and perineum appears not to have had any connection with the fatal septic processes afterwards manifested.

As affecting males and females the statistics of subdiaphragmatic abscess show an interesting disparity between the relative frequency of right- and left-side involvement. Whereas males are much oftener the victims of duodenal ulcer and appendicitis than females, perforative lesions of these organs and subsequent extensions of their suppurative processes to the convexity of the liver account for the preponderance of cases of sub-phrenic abscess on the right side in this sex. Females on the other hand, so much more frequently affected than males by perforating ulcer of the stomach, present a great majority of the cases of abscess involving the left side.

This case offers an opportunity to emphasize what may prove to be of value in the differential diagnosis between sub-diaphragmatic abscess and empyema; namely, when pus, which is aspirated from a region common to both these affections, yields on culture a mixed or pure growth of *bacillus coli communis* there is a strong probability that the point of suppuration is situated below the diaphragm.